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*Draft Report*

**Contaminated Media  
Management Plan (CMMP)  
for the Former  
Reynolds Metals Company Facility  
in Troutdale, Oregon**

April 2016

Prepared by  
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- 2 Analytical Results for Sediment Samples Normalized for PAHs and Pesticides
- 3 Pipeline Soil Samples in the East Potliner Area

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- 1 Site Map
- 2 South Wetlands
- 3 East Potliner Area
- 4-7 Contaminated Groundwater

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## Section 1

# Introduction

Although significant remediation efforts have taken place, contaminated soil or groundwater (contaminated media) remains at the former Reynolds Metals Company (RMC) facility in Troutdale, Oregon. This Contaminated Media Management Plan (CMMP) summarizes the proper management of any contaminated media in the event that they are encountered during future development of the site. This CMMP is intended to communicate methods and practices to future developers that are (a) consistent with recent remediation efforts employed to protect human health and the environment and (b) approved by the Oregon Department of Environmental Quality (DEQ) and the U.S. Environmental Protection Agency (EPA). This CMMP will become part of the institutional controls for the site.

The environmental media management procedures set forth in this CMMP do not prevent any party from seeking pre-approval ~~from the appropriate governmental agency~~ of an alternative procedure allowed by law for managing environmental media on the property. Such pre-approval shall be obtained from the appropriate governmental agency after consultation with the DEQ and EPA project coordinators identified in paragraph 107 of the Final Consent Decree.

## 1.1 Purpose

This CMMP has been developed to ensure that future developers at the site manage contaminated media consistent with approved handling and disposal methods for the RMC-Troutdale facility. This CMMP presents the processes and procedures that are required to handle contaminated material encountered during construction or future use of the site. The final version of this CMMP will be referenced in the approved institutional controls for the site.

## 1.2 Limitations

This document is intended only to provide procedures for identification and handling of contaminated media encountered during redevelopment of the former RMC-Troutdale facility. It is not intended to suggest or provide health and safety level information for the protection of construction workers. Individuals and parties who are tasked with conducting construction activities at this site should read this document and the documents referenced herein. They should also consult an Industrial Hygienist and/or Environmental Professional regarding performance of their own hazard assessments to determine appropriate health and safety measures.

## 1.3 Organization

Subsequent sections of this CMMP are organized as follows:

- **Section 2** provides site description and background information on the facility. It also identifies general soil and groundwater conditions in the project area.
- **Section 3** describes contaminated media management for the South Wetlands area.
- **Section 4** describes contaminated media management for the east potliner area.
- **Section 5** describes procedures for unanticipated materials that might be discovered during construction.

Tables and figures (located at the end of the text) present a summary of analytical data and show the site layout, as well as the locations of the areas of concern.

## Section 2

# Site Overview

## 2.1 Project Area Setting and History

The RMC-Troutdale facility, consisting of approximately 693 acres, is located just north of the city of Troutdale, in Multnomah County, Oregon (see Figure 1). The facility was originally constructed in 1941 for wartime operations as an aluminum reduction plant. Environmental investigation and sampling started in 1994. Since that time, RMC has undertaken a number of remedial actions to address the environmental concerns at this facility. In 2006, the demolition of the plant was completed and a final risk assessment was conducted to ensure that contaminants that have been left onsite do not present an elevated risk to future tenants or the environment. Two specific areas of concern on this site are the South Wetlands and the east potliner area. These areas are described in more detail in Sections 3 and 4, respectively.

## 2.2 Geology

Situated in a historic flood plain and river delta, the site is relatively flat. The general site geologic profile consists of well-graded sands with layers or lenses of silt, silty sands, and sandy silts to approximately 40 feet below ground surface (bgs), followed by well-graded sands to about 170 feet bgs. Layers of silt and sands are found below this area of well-graded sands. Well-graded gravels have been encountered at approximately 281 feet bgs to more than 400 feet bgs.

## 2.3 Groundwater

During the course of the investigations conducted since 1994, the facility was divided into four water-bearing zones. The four zones are defined by the site stratigraphy and the depths at which monitoring wells have been constructed. These four zones and their nomenclature are as follows:

- **Silt Unit.** Where present, the silt unit extends from ground surface to between 20 and 40 feet bgs.
- **Upper Gray Sand (UGS).** The UGS extends to a depth of approximately 50 feet bgs. It is present at the ground surface north of the U.S. Army Corps of Engineers flood control dike and lies beneath the silt unit south of the dike.
- **Intermediate Sand.** The intermediate sand extends from the base of the UGS to a depth of about 100 feet bgs.
- **Deep Sand/Gravel.** The deep sand/gravel extends from the base of the intermediate sand to a depth of 200 feet bgs.

Groundwater can be encountered at approximately 12 to 18 feet bgs throughout the site.

## 2.4 Soil Conditions

Potentially developable areas where contaminants in waste and soil remain on site include the South Wetlands and the east potliner area (described in Sections 3 and 4, respectively).]. The site cleanup process that was approved by EPA and DEQ for this facility was based on both cleanup goals and a visual cleanup standard, followed by confirmation sampling and a sitewide risk assessment. The results of the risk assessment show that the remaining soils currently onsite may contain contaminants but do not pose an unacceptable risk to construction workers or for industrial use and in general can be reused at the site as needed, except that soils that exceed ecological criteria may not be placed in areas outside of the Army Corp of Engineers Levee. Unless otherwise specified in this document, soils across the entire site can be reused at the site ~~as needed~~, without further testing,

## 2.5 Groundwater Conditions

Environmental investigations show that groundwater in some areas of this site has elevated levels of fluoride (See figures 4 thru 7) for the approximate location of contaminated groundwater). Groundwater within or near the identified contaminated areas must be characterized for proper management. A groundwater focused extraction system is currently operating in the southeast quarter of the facility. This system is designed to capture and dispose of groundwater containing the ~~highest~~high concentrations of fluoride in the UGS beneath a former soil source area.

For the majority of the site, the groundwater could in the future be disposed of in either (a) the city of Troutdale's sanitary sewer system, under the terms of a City of Troutdale Industrial Batch Discharge Permit (provided the facility is first annexed into the city of Troutdale), or (b) the Columbia River, under the terms of a National Pollutant Discharge Elimination System (NPDES) permit which is being renewed and modified under an application pending before DEQ, or (c) in any other manner allowable under applicable laws, after obtaining approval from the appropriate government agency and consultation with the DEQ and EPA project coordinators identified in Section 1.

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The groundwater around the former east potliner area may require special handling and is discussed in Section 4.5.



## Section 3

# South Wetlands

## 3.1 Description and History of South Wetlands

South Wetlands is located south of the former RMC reduction plant and ~~consists of the area depicted in Figure 2 ("South Wetlands"). In addition to the main wetlands area, the~~ approximately 23-acre South Wetlands area includes a small portion to the northwest that is covered by sand from the former Building 97 wet scrubber sub area ~~and the~~ railroad embankment that traverses the ~~northern third of the~~ wetlands from east to west. ~~in the northern third of the wetlands is also included in South Wetlands. Figure 2 shows the location of South Wetlands and the features identified above.~~

Between 1941 and 1965, the South Wetlands area was used as a settling pond for discharged wastewater from the processing facilities. According to aerial photographs, the former discharge pond extended just south of the current Graham Road and north into the existing Building 97 sub area. After 1965, the discharge water was diverted and sand fill was placed in the Building 97 sub area so that a wet scrubber system could be installed. The wet scrubber and its foundations have since been removed.

Currently, the ~~area~~ South Wetlands supports primarily wetland-type plants ~~(for example such as, reed canary grass)~~ and is densely vegetated. The U.S. Fish and Wildlife Service (USFWS) has classified South Wetlands as a Palustrine Emergent Wetland as part of its National Wetland Inventory (NWI). The U.S. Army Corps of Engineers (COE) has made no jurisdictional determination of South Wetlands. Surface water forms ponds in this area only during the rainy season, when groundwater elevations are high. The primary sources of water flowing into South Wetlands are listed below:

- Direct precipitation
- Groundwater discharge
- Stormwater/groundwater flows from the overflow of the old Salmon Creek channel east of the wetlands
- Stormwater from the culvert connected to the ditch south of Graham Road
- Stormwater from a street catch basin near the eastern edge of the wetlands, north of Graham Road
- Stormwater from South Ditch via an overflow weir (prior to plant demolition, these waters were pumped to Company Lake)

Surface water currently discharges from South Wetlands through the west drainage into Salmon Creek and ultimately to the Columbia River.

## 3.2 Environmental Activities in South Wetlands

This section summarizes the environmental investigations and removals conducted at South Wetlands from 1994 (when RMC began its pre- Remedial Investigation/Feasibility Study (RI/FS) evaluations) through 2006. These investigations are documented in the following reports:

- *Removal Site Assessment Report, Volume 1, Technical Report, and Volume 2, Technical Appendixes* (CH2M HILL, January 1995)
- *Technical Memorandum DS No. 8: South Wetlands Study Area Supplemental Data-Gathering Summary* (CH2M HILL, January 3, 1996)
- *Draft Current Situation Summary* (CH2M HILL, April 5, 1996)
- *Technical Memorandum DS No. 14: Data Summary for the South Wetlands Addendum to the RI/FS Work Plan, Part 1 – Soil, Surface Water, and Groundwater Quality* (CH2M HILL, February 12, 1997)
- *Technical Memorandum No. 8: South Wetlands PCB Area Excavation Final Summary* (CH2M HILL, January 4, 2000)
- *Draft Final Focused Feasibility Study* (CH2M HILL, June 2000)
- *Technical Memorandum No. 21: Data Report – South Plant RR Fill Embankment Investigation, Post-Demolition RI/RA* (CH2M HILL, January 10, 2005)
- *Post Demolition Residual Risk Assessment* (CH2M-HILL, June 2006)

Figure 2 shows the locations of all representative samples of remaining soils collected in the South Wetlands.

## 3.3 Contaminants of Concern

~~As presented above, there have been a number of environmental~~ Environmental investigations in the South Wetlands over the years. ~~These investigations~~ have included collection and analysis of surface and subsurface soil samples in South Wetlands, the railroad embankment, and the Building 97 sub area. Table 1 presents a summary of the analytical results representative of the soils remaining within the South Wetlands area. Sections 3.3.1 and 3.3.3 focus on the contaminants of concern in the wetlands proper and in the railroad embankment, respectively. Remedial actions within the South Wetlands area have been limited and focused solely on hot spots.

### 3.3.1 South Wetlands

The primary source of contaminants in the main South Wetlands area is process residue solids deposited from past wastewater discharges. Because wastewater flows consisted of varying concentrations of contaminants, the ~~exact location and concentration of these~~ contaminants are widely distributed ~~with~~ and variable ~~concentrations~~. The process residue exists in a layer approximately 4 to 17 inches ~~in depth~~ thick in near-surface soil, except in the Building 97 sub area and the southern portion of South Wetlands, where it is thinner or nonexistent. The estimated volume of process residue is approximately 48,000 cubic yards. The contaminant distribution is generally within the elevation line of the historical operating water level in the old discharge pond (approximately 18 feet National Geodetic Vertical Datum [NGVD] 29), with high concentrations in the historical “low” spots and lower concentrations and thinner layers at the perimeters.

Four soil layers were noted in the shallow subsurface soil: process residue, a silt layer, organically rich material, and silt with clay. Constituent concentrations were greatest in the top (process residue) layer. The silt layer underlying the process residue was not consistently analyzed; therefore, it is uncertain how much leaching into this layer may have occurred. The two bottom layers showed low to nondetectable concentrations of contaminants. However, in areas with no visible process residue, there were still low but detectable concentrations of some constituents (such as cyanide, polychlorinated biphenyls [PCBs], and polynuclear aromatic hydrocarbons [PAHs]) in surface soils.

Constituents detected at elevated levels in South Wetlands include the following:

- Fluoride
- PCBs
- PAHs
- Metals (copper, mercury, vanadium)
- Cyanide

### 3.3.2 Visual Description of Process Residue

Process residue in this area is a fine material that has a bluish-gray to black coloration, often with streaks or thin lenses of lighter gray material running through it. The process residue is distinctly darker than the native silty soils in this area.

### 3.3.3 Railroad Embankment

The railroad embankment is a fill area constructed primarily of used refractory brick, which was staged with other waste on the south landfill prior to use as fill in the wetlands. The fines in the fill materials contain constituents similar to those found in the South Wetlands. The west portion of the railroad embankment was removed in January 2006; this removed portion is outside the South Wetlands boundary indicated in Figure 2. The rest of the embankment remains in place. A summary of the results of samples collected along the remaining portion of the railroad embankment is included in Table 1.

Constituents detected at elevated levels along the railroad embankment include the following:

- Fluoride

- PAHs

### 3.4 Management of Contaminated Soil

Any activities conducted within the South Wetlands that disturb soil could affect contaminated soils. All soil-disturbing activities (for example, constructing utilities, buildings, or foundations) shall follow the management practices below:

- Clean, cut vegetation may be removed from the South Wetlands at the owner's discretion. Grubbed vegetation materials containing contaminated soil from within the wetlands may be stockpiled and allowed to decompose within the wetland provided the decomposed stockpiled materials are finish graded to an elevation no higher than 18 feet NGVD.
- Excavated contaminated surface soil may be disposed of offsite in a Subtitle D landfill.
- Excavated contaminated surface soil may be placed back into the South Wetlands if placed adjacent to the excavation and finish graded to an elevation no higher than 18 feet NGVD.
- Excavated contaminated surface soil may be backfilled into the same excavation from which it was taken, provided the excavation has not penetrated through the layer of contaminated soil into the clean subsurface soil such that contaminated soil would end up at a lower elevation than currently exists or be mixed with clean soil. If an excavation penetrates the contaminated surface layer into the clean subsurface layer, then backfill may be accomplished only with clean backfill materials or with material taken from other areas of the former RMC facility. See last bullet item
- Excavated contaminated surface soil from the South Wetlands may not be placed back into the wetlands in any area that has been covered with a layer of clean soil or in other areas of the Property that are known to be free of contamination.
- The former railroad embankment may be graded into the wetlands area provided that the finished elevation of such materials does not exceed 18 feet NGVD.
- Before occupational use of South Wetlands may occur, the wetlands must be covered by a minimum of one foot of clean backfill or backfill material from other areas of the former RMC facility. Prior to such backfilling, after notifying Oregon DEQ shall be notified of the source of the backfill material and confirming confirmation shall be made that the requirements of the Record of Decision including this CMMP will be followed.

### 3.5 Management of Groundwater and Surface Water

Any surface water or groundwater that must be managed due to construction or redevelopment activities within the South Wetlands boundary may be impounded within the South Wetland boundary and allowed to re-infiltrate or after evaluation for proper management may be discharged under either a future DEQ issued NPDES permit (~~issued by DEQ~~) or a future City of Troutdale Industrial Batch Discharge Permit. The NPDES permit renewal application submitted to the DEQ requests the addition of construction dewatering water to allow for this type of discharge, provided it is performed within the constraints of the permit. The renewed permit is expected to be finalized before the end of 2007. This permit is transferable to a new owner.

## Section 4

# Former East Potliner Area

## 4.1 Description and History of the Former East Potliner Area

The former east potliner area ("Former EPL Area") lies east of the former RMC-Troutdale plant and inside the COE flood control dike (see Figure 3). The area encompasses about 3 acres, and it is bisected by a Northwest Pipeline Corporation right-of-way containing two buried 18-inch-diameter, high-pressure natural gas pipelines. A former railroad spur passed along the southern perimeter of this area.

Aerial photographs indicate that, from the early days of plant operation, this area was used for temporary storage of plant solid waste. This waste is believed to have consisted primarily of spent potliner, but it also may have included rodding room waste, carbon plant waste, cryolite, demolition waste, and used refractory brick.

## 4.2 Environmental Activities in the Former EPL Area

This section summarizes the environmental investigations and removals conducted in the Former EPL Area from 1994 (when RMC began its pre-RI/FS evaluations) through 1997. These investigations are documented in the following reports:

- *Removal Site Assessment Report, Volume 1, Technical Report, and Volume 2, Technical Appendixes* (CH2M HILL, January 1995)
- *Technical Memorandum DS No. 3: East Potliner Area: Supplemental Data-Gathering Summary* (CH2M HILL, June 15, 1995)
- *Final East Potliner Removal Action Report* (CH2M HILL, April 3, 1997)

### 4.2.1 Former East Potliner Area Removal Action

The objective of the removal action was to excavate spent potliner, a listed hazardous waste (Waste Code K088) per 40 *Code of Federal Regulations* (CFR) 261.32 (a). The cleanup goal for the EPL removal action was visual removal of "primary source materials" (spent potliner materials and mixed wastes). After receiving a favorable "contained in" determination from DEQ, RMC successfully screened a significant amount of spent potliner waste from soil by running the material through a 1-inch screen. Material retained by the 1-inch screen was considered to be

K088 waste and was disposed of in a Subtitle C landfill. Material passing the 1-inch screen that also contained cyanide levels of less than 590 milligrams per kilogram (mg/kg) was considered to be solid waste and was disposed of in a Subtitle D landfill. If material passing the 1-inch screen also contained cyanide levels greater than 590 mg/kg these materials would have been considered to be K088 waste and disposed of at a subtitle C landfill.

RMC completed the removal of spent potliner and other waste material from the Former EPL Area in March 1996 and disposed of this material in an offsite landfill.

#### 4.2.2 Exception: Natural Gas Pipelines

An exception to the remedial action described above was the natural gas pipeline trench that bisected the site. The initial electromagnetic conductivity (EM) survey indicated the presence of spent potliner material near the existing high-pressure natural gas pipelines. Excavation activities near the pipelines found spent potliner in the material used to backfill the eastern pipeline trench. The western pipeline trench appeared to be backfilled primarily with soil; however, there is a chance some spent potliner may be found mixed in this backfill as well. EPA approved RMC's request to leave potliner in place in the pipeline trench because the risk of excavation adjacent to the high-pressure pipelines was not justified by the amount of potliner remaining in the trench. Excavation along the length of the pipelines was limited to removal of material within about 1.5 to 2 feet of either pipeline. The pipeline trench area potentially containing spent potliner wastes is depicted on Figure 3 and is referred to herein as the "Pipeline Trench in the Former EPL Area".

Portions of the pipeline trench were backfilled immediately after excavation, at the request of the Northwest Pipeline Corporation, to maintain minimum cover over the pipes. Samples of the remnant spent potliner were collected, and measurements were taken to estimate the nature and extent of material that was left in place, as described in Section 4.3.

### 4.3 Contaminants of Concern

Characterization and quantification of remnant spent potliner left in the pipeline trench were performed in accordance with *Memorandum No. 14: East Potliner Remediation Revised Sampling Plan* (CH2M HILL, November 1, 1995). The mass of remnant spent potliner left in the Pipeline Trench in the Former EPL Area was estimated by observation and measurement of the contaminated areas of the Pipeline Trench in the Former EPL Area while it was open. On the basis of this work, it was determined that the remnant spent potliner existed primarily in concentrated pockets but was also found mixed with soil. EPA and RMC agreed to estimate the quantities of each material and to collect representative samples of the spent potliner, the potliner mixed with soil, and the soil itself.

Concentrated spent potliner was sampled directly. Samples of the potliner mixed with soil and the soil itself were collected, and the mix of soil and potliner was then screened with a 1-inch soil sieve. The screened fines (1-inch-minus) and the oversized material (1-inch-plus) were

collected and analyzed separately. From this information, it was estimated that approximately 90 cubic yards of spent potliner with the characteristics of samples EP-PIPE-HIGH01 and EP-PIPE-PLUS01 remain in the trench. It was also estimated that the pipeline trench contains approximately 500 cubic yards of soil with the characteristics of the Sample EP-PIPE-MINUS01. The locations of these samples are shown in Figure 3. The test results for these samples are presented in Table 2. A favorable contain-in determination now requires that the soils meet the current land disposal restrictions (LDRs), where none existed as the time of DEQ's 1995 contained-in determination. Based on the test results presented in Table 2, it is believed that the soil with the characteristics of Sample EP-PIPE-MINUS01 would support a determination that it is no longer a K088 waste and could be managed as nonhazardous waste. RMC received confirmation from DEQ in a letter dated July 17, 2006, that the 1995 DEQ-approved contained-in determination is still valid for waste encountered in the Pipeline Trench in the Former EPL Area subject to meeting current LDRs. Copies of the 1995 DEQ-approved contained-in determination and the July 17, 2006, letter are provided in Appendix A.

Constituents detected at elevated levels in the Former EPL Area- are as follows:

- Fluoride
- PAHs
- Metals (aluminum, arsenic, iron)
- Cyanide
- Spent potliner (K088)

#### 4.3.1 Visual Description of Spent Potliner

Spent potliner in this area is a hard, dense, carbon based material that occurs in chunks and/or granular size. It has a dark-gray to black coloration, often with thin marbling of lighter gray/white material running through the chunks. The spent potliner is distinctly darker than the native brown sands and silty soils in this area.

### 4.4 Management of Contaminated Soil

As part of the agreement with EPA and DEQ, clean soil was placed over the contaminated fill inside the pipeline trench. Any activities that are conducted within the Pipeline Trench in the Former EPL Area that are expected to result in removal of the clean soil and to penetrate into the contaminated soil shall be managed in the following manner:

- Clean overburden shall be set aside and may be reused as backfill in the Pipeline Trench in the Former EPL Area.
- Materials removed from the Pipeline Trench in the Former EPL Area that is mixed with spent potliner shall be disposed of offsite by either of the following options:
  - All materials may be managed and disposed of as spent potliner, a K088 listed hazardous waste. These materials may be excavated and loaded directly into containers or transport trucks, or it may be stockpiled prior to loading. If the latter, it shall be stockpiled in a lined and covered cell designed to prevent stormwater run-on and runoff.



- Alternatively, the materials may be screened using a 1-inch screen to separate K088 waste from the soil media. The soil passing a 1-inch screen may be disposed of offsite in a Subtitle D landfill as nonhazardous waste, provided that representative samples of the screened soil contain constituent levels below the maximum level for land disposal restrictions as a K088 waste. Materials retained by the 1-inch screen shall be disposed of offsite in a Subtitle C landfill as K088 listed hazardous waste.
- The Pipeline Trench in the Former EPL Area shall be backfilled with clean imported materials or other backfill materials from elsewhere on the former RMC facility.

## 4.5 Management of Groundwater and Surface Water

RMC has received a favorable contained-in determination for all groundwater beneath the ~~site~~Former EPL Area. This determination letter is provided in Appendix B. Groundwater extracted from beneath the ~~site~~Former EPL Area has been determined to not contain RCRA K088 waste. Thus, any groundwater that is encountered or removed from beneath the Former EPL Area will not require management as K088 waste, provided the free cyanide level is below the MCL for safe drinking water (0.2 mg/l) and may be discharged under either a future NPDES permit (issued by DEQ) or a future City of Troutdale Industrial Batch Discharge Permit. The NPDES permit renewal application submitted to the DEQ requests the addition of construction dewatering water to allow for this type of discharge, provided it is performed within the constraints of the permit. The renewed permit is expected to be finalized before the end of 2007. This permit is transferable to a new owner.

~~DEQ's contained-in determination is limited to the groundwater beneath the site.~~ Additional contained-in waste profiling may be required for the management of storm water runoff if derived from the removal of the spent potliner remaining in place in the natural gas pipelines trench. A contained-in determination for such media will be made on the basis of risk for the intended use. Appropriate risk-based human health and ecological exposure criteria appropriate for the site for free cyanide include: maximum contaminate level (MCL) of 0.2 mg/l, EPA Region 6 preliminary remediation goal for tap water of 0.730 mg/l, and direct contact for industrial workers of 62 mg/l.

## Section 5

# Procedures for Unanticipated Materials

## 5.1 General

In the event that material that appears to be contaminated is encountered in areas of the site where they were not anticipated, the practices identified below shall apply.

- A representative sample of the material shall be collected and analyzed, at a minimum, for the following constituents: fluoride, cyanide, PAHs, and PCBs. Other constituents may be added to the analyte list based on observation of the encountered material. Such additional constituents include total petroleum hydrocarbons (TPH), volatile organic compounds (VOCs), and semivolatile organic compounds (SVOCs).
- Materials with concentrations less than DEQ's RBCs (OAR 340-122-0205 through 340-122-0360) for residential cleanup standards may be managed and disposed of as clean fill onsite or offsite.
- Materials with concentrations that exceed ecological criteria may not be placed in areas outside the Army Corp of Engineers levee.
- Materials with concentrations less than DEQ's RBCs (OAR 340-122-0205 through 340-122-0360) for construction workers may be managed onsite.
- Materials with concentrations greater than DEQ's RBCs (OAR 340-122-0205 through 340-122-0360) for construction workers shall be managed onsite if the exposure pathway is effectively eliminated through site development, or if it can be demonstrated that future exposure to these materials will not exceed DEQ's RBCs (OAR 340-122-0205 through 340-122-0360) for excavation workers. If these conditions cannot be met, the material shall be disposed of in an appropriate offsite landfill.

## 5.2 Future Discoveries of Furnace Brick

Spent furnace brick from the former reduction facility has been used extensively as fill material, riprap and road base aggregate. Known brick locations include but are not limited to: along the Army Corp of Engineers levee south of Company Lake, along portions of Company Lake outfall ditch and the Columbia and Sandy River, backfill in the south ditch storm water pump fore bay, and several former facility aggregate roads. RMC has demonstrated to EPA and DEQ satisfaction that the brick does not pose an unacceptable risk and consequently no special management requirements will be applicable to future discoveries onsite of buried furnace brick.

### 5.3 Future Discovery of Spent Potliner

In the event that spent potliner is discovered outside of the Former EPL Area, note that the current DEQ contained-in determinations referenced in Section 4, will not apply. In this event, the spent potliner (K088) must be managed as a hazardous waste. Any soil, ~~or~~ groundwater or stormwater associated with the K088 waste is subject to the requirements of 40 CFR Part 262.

A contained-in determination for soil will be made on the basis of the Land Disposal Restrictions (LDR) treatment standards for total cyanide, because the risk based level for residential soil ingestion is higher. The LDR for total cyanide is 590 mg/kg. There are currently 25 LDR constituents for K088 waste that also apply in the management of these soils.

A contained-in determination for such water will be made on the basis of risk for the intended use. Appropriate risk-based human health and ecological exposure criteria appropriate for the site for free cyanide include: maximum contaminate level (MCL) of 0.2 mg/l, EPA Region 6 preliminary remediation goal for tap water of 0.730 mg/l, direct contact for industrial workers of 62 mg/l.

~~A contained in determination for soil will be made on the basis of the Land Disposal Restrictions (LDR) treatment standards for total cyanide, because the risk based level for residential soil ingestion is higher. The LDR for total cyanide is 590 mg/kg. There are currently 25 LDR constituents for K088 waste that also apply in the management of these soils.~~

A visual description of spent potliner is provided in section in 4.3.1. However, there are several other carbon based waste materials originating from past smelter operations, the remnants of which look very similar to spent potliner. These materials include: carbon anodes, carbon anode butt returns, carbon anode butt cleaning scrap, green mill carbon scrap, and graphite elements such as flux tubes, arc furnace electrodes and molten metal filter elements. Several of the examples provided may also contain low levels of cyanide, Therefore, unless it is known that spent potliner once existed in an area, such as the Former EPL Area, it should not be assumed that material matching the description of 4.3.1 is spent potliner. If the cyanide level in the carbon material matching the description of 4.3.1 is greater than 590mg/kg then the material is most likely spent liner.